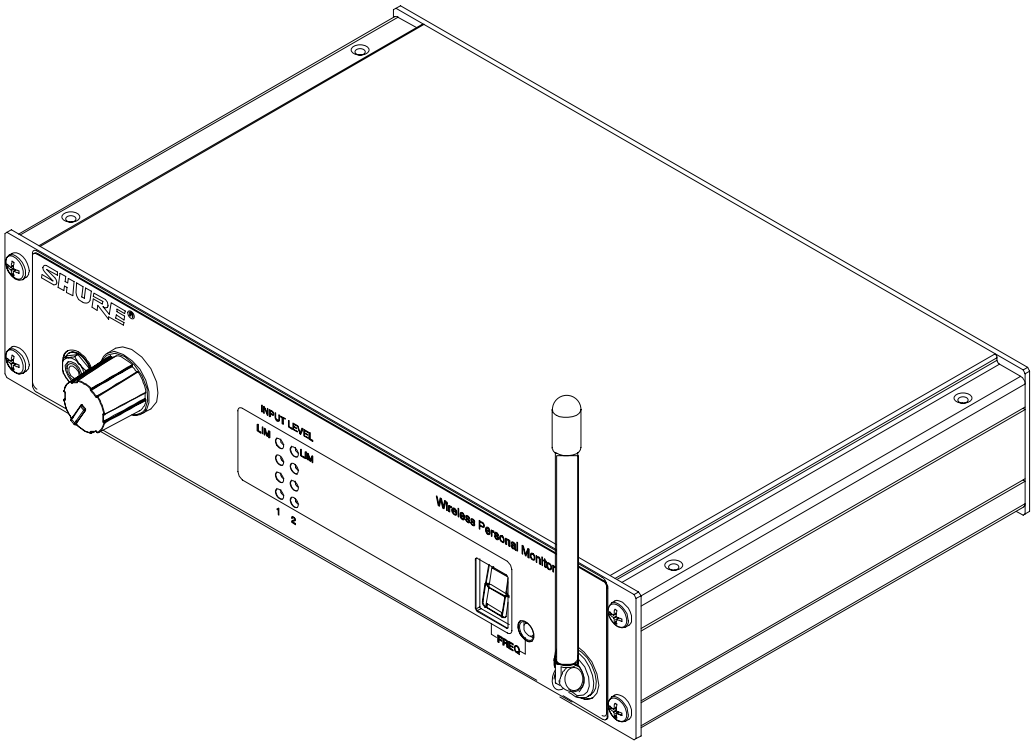
PRODUCT INFORMATION

SHURE®

Model P4T Transmitter User Guide



P4T Transmitter

for use with the PSM® 400 Wireless Personal Monitor System

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27B8712 (TD)

CE Printed in U.S.A.

ENGLISH **3**
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WARNING!

USING THIS SYSTEM AT EXCESSIVE VOLUMES CAN CAUSE PERMANENT HEARING DAMAGE. USE AS LOW A VOLUME AS POSSIBLE.

In order to use this system safely, avoid prolonged listening at excessive sound pressure levels. Please use the following guidelines established by the Occupational Safety Health Administration (OSHA) on maximum time exposure to sound pressure levels before hearing damage occurs.

90 dB SPL at 8 hours
95 dB SPL at 4 hours
100 dB SPL at 2 hours
105 dB SPL at 1 hour
110 dB SPL at $^1/_2$ hour
115 dB SPL at 15 minutes
120 dB SPL — avoid or damage may occur

It is difficult to measure the exact Sound Pressure Levels (SPL) present at the eardrum in live applications. In addition to the volume setting on the PSM, the SPL in the ear is affected by ambient sound from floor wedges or other devices. The isolation provided by the fit of quality earphones is also an important factor in determining the SPL in the ear.

Here are some general tips to follow in the use of this product to protect your ears from damage:

1. Turn up the volume control only far enough to hear properly.
2. Ringing in the ears may indicate that the gain levels are too high. Try lowering the gain levels.
3. Have your ears checked by an audiologist on a regular basis. If you experience wax buildup in your ears, stop using the system until an audiologist has examined your ears.
4. Wipe the earphones with an antiseptic before and after use to avoid infections. Stop using the earphones if they are causing great discomfort or infection.

This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

Licensing Statement. A user license may be required for operation. Contact the communications authority in your country for more information.

Modifications to Approved Equipment. Changes or modifications not expressly approved by Shure Incorporated could affect compliance with telecommunications standards, thereby voiding the user's authority to operate this product.

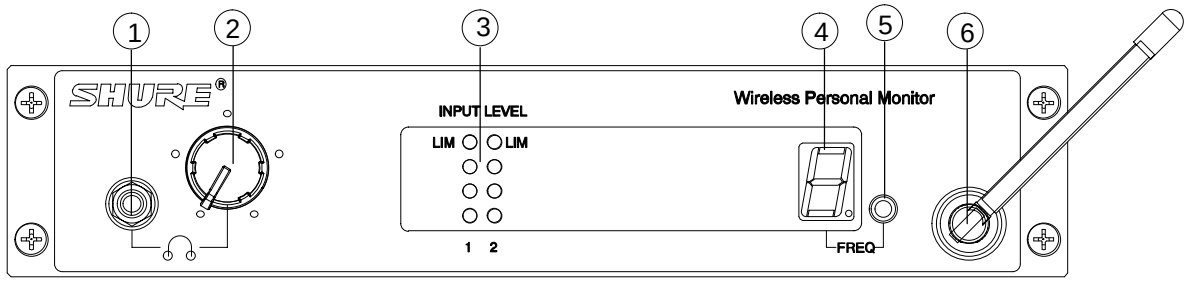
Introduction

Thank you for buying the P4T Transmitter. The P4T is a component in the PSM® 400 family of wireless personal monitors. When used with a P4R Receiver, it provides the many advantages of an in–ear monitoring system, including:

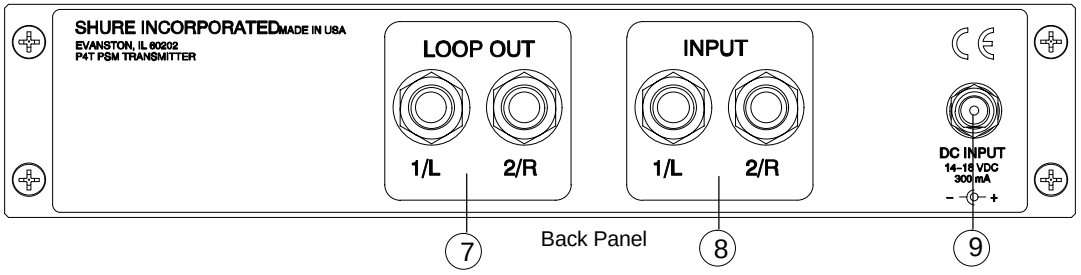
- **Improved Sound Quality** - high fidelity without the risk of feedback,
- **Increased Mobility** - your mix moves with you,
- **Personal Control** - through volume adjustment and MixMode®.

For further information on the PSM 400 system, see the PSM 400 Wireless Personal Performance Pack User's Guide, available on the web at **www.shure.com**.

P4T Transmitter Features



Front Panel



Back Panel

1. **Local Earphone Output Jack (1/8 inch)**: Connects to E1 or E5 earphones.
2. **Local Earphone Level Control**: This knob adjusts the volume of the local earphone jack's amplifier. Always listen at low levels.
3. **Input Level LEDs**: Two vertical strings of four LEDs display the input level of the left and right input channels. The four LEDs on the left display the status of the signal from channel 1 and the four LEDs on the right display the status of the signal from channel 2:

LED	Signal Status
RED (top)	Limiter Active
YELLOW (middle)	Nominal Level
GREEN (bottom two)	Signal Present

4. **Transmission Frequency LED**: This indicates which of the 16 channels (0–9 or A–F) is transmitting.
5. **Frequency Select Button**: This recessed button changes the transmission channel. (Use a 1/4" plug to press this button.)
6. **Front-Mounted Antenna**: This permanently attached antenna is break-resistant.
7. **LOOP OUT Jacks**: Two 1/4" TRS jacks allow the audio signal to pass through the transmitter to other devices, including other transmitters, tape recorders, or amplifiers.
8. **INPUT Jacks**: Two 1/4" TRS switching jacks are line level audio inputs.
9. **DC INPUT Connector**: Input for PS40 power cord.

Set Up and Operation

Follow these directions to set up the transmitter for operation.

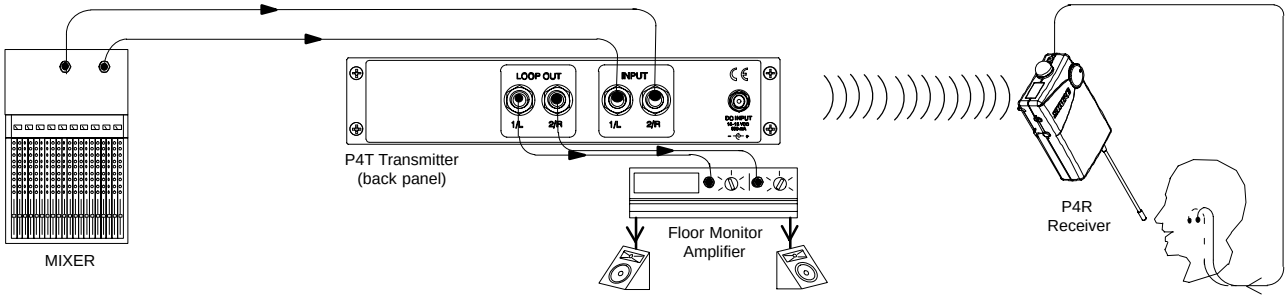
1. Plug the power cord into the transmitter's DC INPUT power connector. Plug the other end of the power cord into a wall outlet.
2. Connect line level outputs of an audio source into the audio INPUTS of the transmitter. Use both of the input jacks for a two-channel source. Use either input jack for a mono source. The P4T transmits in MixMode/stereo if both inputs are used, but automatically transmits in mono if only one input is used.

   NOTE: All inputs are phantom power protected up to 50 VDC.
3. Select an operating frequency using the Frequency Select Button. Push the button repeatedly until the LED displays the desired channel. The display flashes. Push and hold the button until the flashing stops to confirm the change (use a 1/4" plug to press the button).

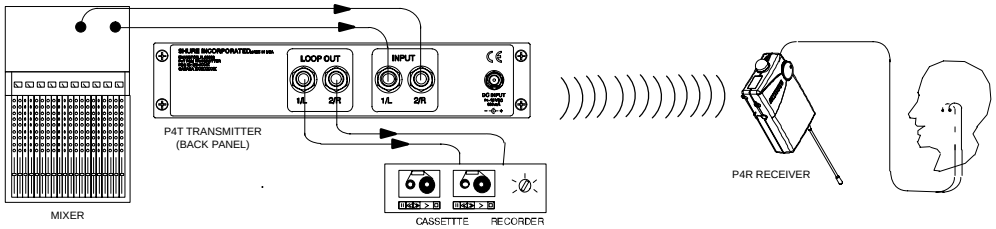
   IMPORTANT: Never set more than ONE transmitter to the same operating frequency.
4. Once the P4T transmits audio, observe the input level LEDs. If the LEDs consistently illuminate red, decrease the output level of the audio source until the red LEDs flicker occasionally.
5. Set up the P4R receiver as directed in the P4R user's guide. Make sure that the frequency selected on the receiver matches the frequency selected on the transmitter.

LOOP Applications

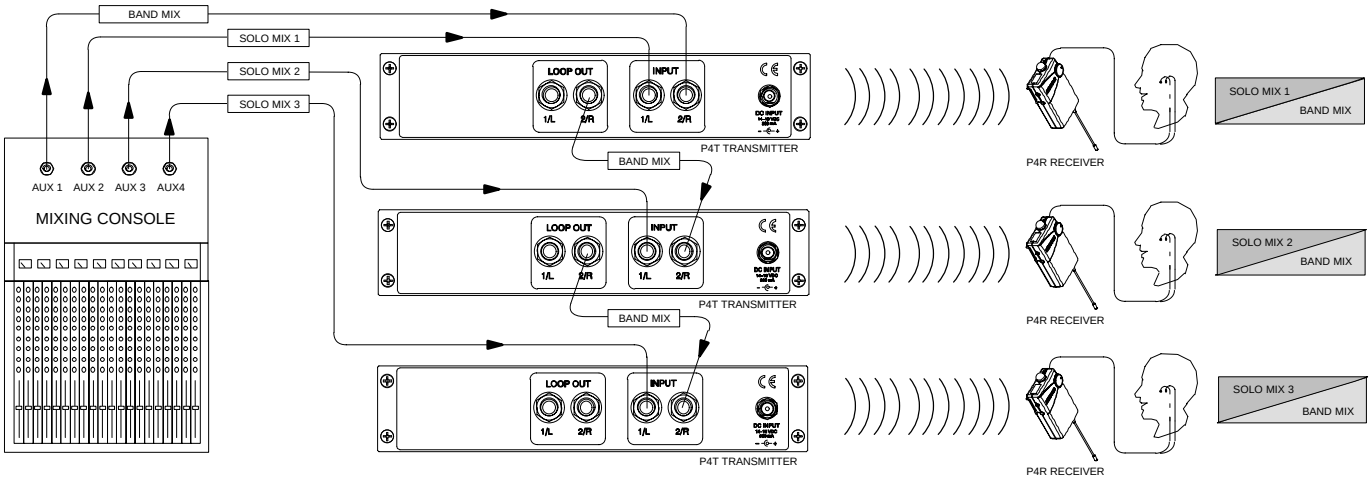
The LOOP OUT 1/L and 2/R outputs route the transmitter's incoming signal to other devices. Use the loop feature of the transmitter in any number of applications, such as the following:



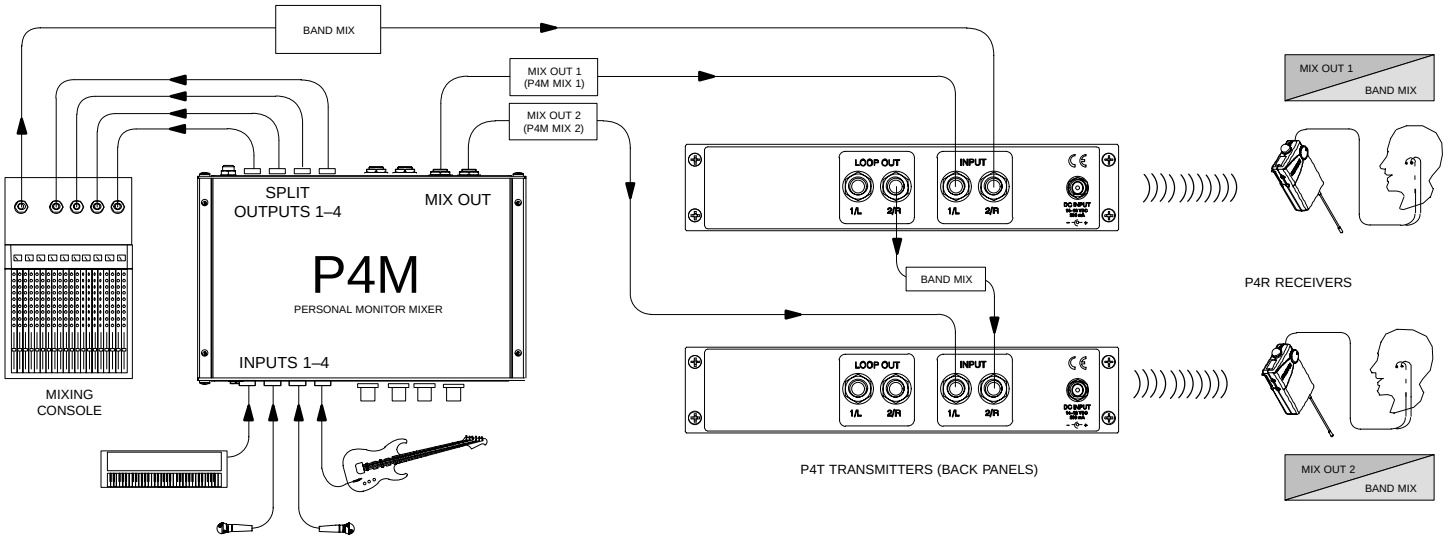
Operating Floor Monitors Through a P4T Transmitter: Send an audio signal through the LOOP connectors to a floor monitor amplifier. In this set up, the receiver and the onstage monitors reproduce the same audio.



Making a Recording Through a P4T Transmitter: To record a performance, connect the LOOP outputs to the inputs of a tape deck, DAT, or other recording device.



Operating Multiple PSM Wireless Systems Under MixMode Control: Send a band mix from a mixer to a P4T transmitter, then send the band mix on to other transmitters using the P4T's LOOP OUT feature. Also send independent monitor mixes or direct outputs to the second channel of each transmitter. The entire band receives the same band mix, while each individual player also hears a solo mix of their own. Use the MixMode control on the P4R receiver to adjust the level between the solo mix and the band mix.



Operating Two PSM Wireless Systems Under MixMode Control From a P4M Mixer: Send a band mix from a mixing console to a P4T transmitter, then send the band mix to a second transmitter using the P4T's LOOP OUT feature. Create an individual mix for each transmitter using the P4M mixer. Send the mix to each transmitter using the P4M's MIX OUT 1 or MIX OUT 2 outputs. Use the MixMode control on the P4R receiver to adjust the levels between the band mix and the P4M mix (for more information on the P4M Personal Monitor Mixer, see the P4M User's Guide or the PSM 400 Wireless Personal Performance Pack User's Guide, available at **www.shure.com**).

SPECIFICATIONS

RF Frequency Range
722 to 865 MHz (country dependent)
Operating Range
300 feet (environment dependent)
RF Output Power
50 mW (+17 dBm) typical conducted (country dependent)
Modulation Limiter
Internal peak limiter (>10:1 compression)
Antenna
1/4 Wavelength, semi-rigid, PCB Mount
Power Requirements
Operating voltage 14–18 Vdc
Supplied with one of the following external power supplies:

- Model PS40: 120 Vac, 60 Hz input, UL and cUL approvals.
- Model PS40E, Model PS40UK: 230 Vac, 50/60 Hz input, TUV approval with European CE marking, conforms to European Low Voltage Directive 72/23/EEC.

Current
250 mA maximum
Dimensions
219.2 mm X 43.6 mm X 136.5 mm (8.6 in. X 1.7 in. X 5.4 in.)
Net Weight
907.2 g (2 lbs., 0 oz.)

CERTIFICATION
P4T: Type accepted under FCC Part 74, FCC ID DD4P4T. Certified by IC in Canada under RSS–123.
EP4T: Conforms to European Union Directives, eligible to bear CE marking. Type approved under EN 300 422. Meets requirements of European EMC standard ETS 300 445.

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Furnished Accessories

Single Mount Rack Bracket	53A8450
Dual Mount Rack Bracket	53A8442
Straddle Bars	53A8443
AC Adaptor	PS40 (120V), PS40E (230V), PS40UK (230V)

CONNECTORS

P4T Audio Inputs (1/L and 2/R)

Connector Type:	1/4-inch jack (female) TRS
Configuration:	electronically balanced
Actual Impedance:	20 kΩ
Nominal Input Level:	–10 dBV/–7.8 dBu
Maximum Input Level:	+15 dBu
Pin Assignments:	Tip = hot ring = cold sleeve = ground
Phantom Power Protection?	Yes Up to 50 VDC

P4T LOOP Outputs (1/L and 2/R)

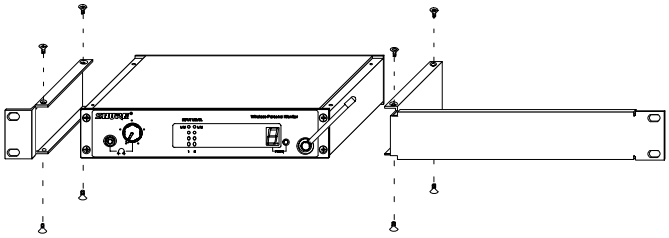
Connector Type:	1/4-inch jack (female) TRS
Configuration:	electronically balanced
Actual Impedance:	20 kΩ
Nominal Output Level:	–10 dBv/–7.8 dBu
Maximum Output Level:	+15 dBu
Pin Assignments:	Tip = hot ring = cold sleeve = ground
Phantom Power Protection?	Yes Up to 50 VDC

RACK MOUNTING THE P4T

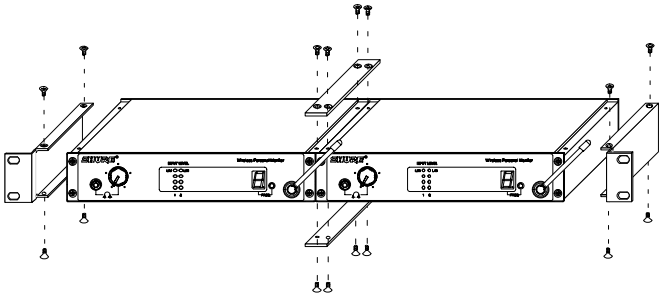
The P4T features a $^1/_2$-rack chassis specially designed for sturdiness. This eliminates the sagging and bending found in most $^1/_2$-rack designs — the brackets and straddle bars ensure that the units will be installed securely.

WARNING: Do not torque the screws too tightly, or the chassis may be damaged.

Single Unit

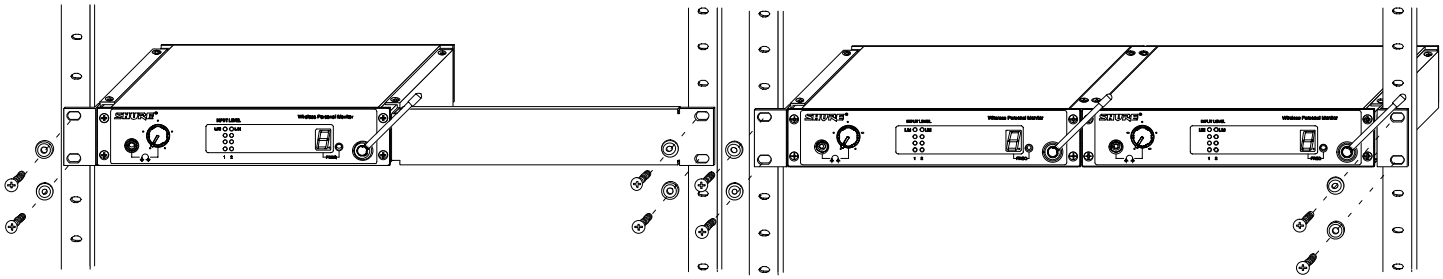


Dual-Mounted Units



Mounting in an Equipment Rack

NOTE: Be sure to use both straddle bars when installing dual units.



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